What is claimed is

1. A method of transmitting, via a synchronous digital transport network, a frame-structured synchronous multiplex signal, composed of frames having a payload section and an overhead section, in the payload section of which multiplex units are multiplexed according to a multiplex hierarchy, comprising the step of transmitting a frame to be transmitted, including its unchanged overhead section, as payload in a concatenation of newly formed multiplex units.

2. A method according to Claim 1 further comprising the steps of:

- creating a number of new multiplex units of the same size, and concatenating these new multiplex units to form a virtual concatenation,
- packing the frame, including the overhead section thereof, in payload sections of the concatenated new multiplex units,
- creating at least one new frame and embedding the concatenated new multiplex units in the payload section thereof, and
- transmitting the at least one new frame via the synchronous transport network.

3. A method according to Claim 1, wherein the synchronous transport network is a SDH network, wherein the frames are synchronous transport modules of the type STM-N where N = 1, 4, 16 or 64, wherein the multiplex units are virtual containers of the type VC-N where N = 11, 12, 2, 3, or 4 or contiguously concatenated virtual containers of the type VC-4-Nc where N = 4 or 16, and wherein the newly formed multiplex units are virtual containers of the type VC-N where N = 3 or 4.

4. A method according to Claim 1 wherein, in a first of the newly formed multiplex units, the overhead section of a frame to be transmitted and path overheads of the multiplex units contained in the payload section of this frame are combined, and wherein one of the multiplex units from the payload section of this transport frame without the path overhead thereof is inserted into each of the remaining newly formed multiplex units of the concatenation.

5. A method according to Claim 1, wherein a frame of the type STM-1, OC-3 or OC-3-3c is transported via two virtually concatenated virtual containers of the type VC-4 or via four virtually concatenated virtual containers of the type VC-3.

6. A method according to Claim 1, wherein a frame of the type STM-4, OC-12 or OC-3-12c is transported via five virtually concatenated virtual containers of the type VC-4 or thirteen virtually concatenated virtual containers of the type VC-3.

7. A method according to Claim 1, wherein a frame of the type STM-16, OC-48 or OC-3-48c is transported via seventeen virtually concatenated virtual containers of the type VC-4 or via fifty one virtually concatenated virtual containers of the type VC-3.

8. A method according to Claim 1, wherein a frame of the type STM-64, OC-192 or OC-3-192c is transported via sixty eight virtually concatenated virtual containers of the type VC-4.

9. A multiplexer for a synchronous digital transport network comprising:

- at least one tributary input for receiving a first frame-structured synchronous multiplex signal being composed of first frames each having a payload section and an overhead section, in the payload sections of which multiplex units are inserted in accordance with a multiplex hierarchy,
- a multiplex device, connected to the tributary input, for creating new multiplex units, for concatenating the newly formed multiplex units to form a concatenation, and for packing a received frame, including the unchanged overhead sections thereof, as payload in the concatenation of the newly formed multiplex units, and
- at least one output for creating and transmitting a second, frame-structured synchronous multiplex signal composed of second frames in whose payload sections the concatenated, newly formed multiplex units are inserted.

10. A multiplexer according to Claim 9 comprising a switching matrix for selectively switching of multiplex units, wherein the multiplex device is connected to a matrix input and the output is connected to a matrix output.